



Bladestop™ update

17th July 2009

Dear All,

MLA is committed to improve safety and reduce risks and hazards at meat processing plants. Band saws are the biggest contributors to amputations and serious injuries in the meat industry. Hence this area should be a key focus of any effort to improve OH&S conditions, while recognising how difficult it may be to solve the problem, or at least ameliorate the negative and cruel consequences.

It may be decades (if ever) until automation progresses to the stage where manually operated band saws are completely eradicated from the industry.

In the interim, MLA has focussed on the delivery of a safety mechanism that reduces the seriousness and extent of band saw inflicted injuries, with the result of virtually reducing the occurrence of amputations to zero.

MAR, a technology provider working with MLA in the processing automation program, has developed a technology (based on an adaptation from the timber industry) which consists of a circuit board that triggers a blade stopping mechanism whenever human flesh is in contact with the blade. The Bladestop™ system acts fast enough to avoid major injury to the operator.

The R&D phase, with the timber industry concept as the starting point, turned out to be a much more complex process than originally expected, with the design of the components requiring several iterations.

The typical challenges of any new development have been exacerbated by a safety system that demands stringent requirements and total reliability to deliver the promised reduced number of injuries and zero amputations.

The initial plan was to retrofit existing band saws with Bladestop™ kits, but this approach was subsequently found to be flawed due to the multiple complications arising from integrating the electronics and mechanisms to the wide variety of band saws installed in processing plants plus the poor condition of some saws. Eventually it was determined that a new system would need to be designed from scratch and integrated into a brand new saw. Currently, a Thompson Mk6 bandsaw with stainless steel flywheel is the basis for a Bladestop™ system, but other bandsaw makes could be used in the future.

Although the development of the Bladestop™ system has experienced significant progress and is in its path to completion, with an initial prototype currently running trials at NCMC (a meat processor in northern NSW), the final commercial design is not yet frozen. The trials at NCMC have provided extremely valuable information to improve the mechanism and different subcomponents but there are still some minor issues to resolve, particularly because only continuous testing during several months can prove the required reliability.

The above trial has shown that the initial approach of scheduling a roll-out plan for up to 20 plants without freezing the design was not realistic and is likely to lead to more unpredictable delays.

In retrospect, we were too enthusiastic in pushing hard for a solution that could bring substantial benefits to the industry and the community, but the inherent challenges related with developing and proving a safety system of

this kind have forced us to reassess the situation.

Current status

A prototype is currently running in NCMC, with several modifications already introduced and others documented to be implemented in the next version. Significant changes have been made compared to the original design, with the most significant one being the new approach to stop the blade. Now the blade is not cut anymore but clamped, allowing re-use of the same blade after tripping and hence avoiding blade replacement every time the system is activated voluntarily or involuntarily.

This change of philosophy as well as other feedback from trials has introduced many other modifications around the mechanism, related components, electronics, encasing, arm band, etc.

The major consequence of those changes is a significant increase in cost, taking the total system price beyond the \$80,000 (ex GST) mark for the remaining prototypes. Large scale commercial manufacture may be able to reduce this price, possibly by up to 20%, but this represents a large increase on the original estimated system cost.

A plan has been drafted to implement all improvements in three more units, to be tested in three plants for a period of a few months before roll-out is finally commenced, hopefully some time in the first half of 2010.

However, the drastic price increase, the continuous delays and the consistent failure during the last 18 months to meet deadlines have triggered an internal reassessment of the situation in MLA. We are aware that the industry has been waiting far too long for this technology, but precisely because of that we acknowledge we cannot afford announcing a roll out plan if we are not 100% confident this time the plan will be successfully delivered.

Next steps

For the above reasons, MLA has commissioned an independent third party to undertake a technical review that will analyse the design MAR is working on now, including not only the enhancements introduced in the last prototype but also all the recommended modifications to be implemented in the next iteration.

Additionally, this independent third party will assess how far value engineering of the final design can go in order to reduce the future retail price if the system is manufactured in large numbers.

Once this technical review is finished, we will have a fair understanding of:

- The efficacy and robustness of the design, and whether any additional development is required or finally we can 'freeze' the design; and
- The economics of the technology, i.e. not only what is the expected retail price in the near future but also how that price could be reduced in the mid to long term.

With that information in place, MLA will re-evaluate the status of Bladestop™, to make sure the design finally addresses all the operational and safety requirements, the solution is sound and it has real chances to become a widely adopted system, materialising all the benefits claimed from the start.

MLA will communicate the results of the evaluation to industry, and only after the above steps are satisfactorily resolved will MLA resume funding.

We are working with the following tentative calendar of events:

- 1- August 2009: The independent technical review starts.
- 2- October 2009: The technical review is completed.
- 3- November 2009: Results are presented to the industry and MLA reassesses MAR's proposal to freeze the design and manufacture and test three units based on the final design. GO/ NO GO point.

- 4- December 2009: Assuming a positive decision is made in step 3, a new project starts to manufacture and test three additional units.
- 5- June 2010: The installation and test of the first three operational units concludes, an open day is held to show results to the industry and a roll-out plan is proposed for the next 10 units.
- 6- July-August 2010: The roll out starts and is completed in 6 to 8 months.
- 7- First half of 2011: Bladestop™ is fully commercial and finally offered to the whole industry.

What you should expect now

If your plant signed up to participate in the original roll-out plan, MLA will soon communicate directly with you to discuss the different options.

One of the consequences of the significant system cost increase is that the budget that was originally approved is not enough now to fund the planned 20 units. Although the roll-out plan is now officially on hold, we will communicate straight away with all signing parties to initiate discussions and prepare for the potential future deployment of a trial prototype. This way we will avoid further delays, allowing us a prompt start of the roll-out, assuming the outcome from the technical review is positive.

In any case, the cost increase and budget limitations will almost certainly restrict MLA's ability to fund so many systems, and although MLA will honour its commitments as far as possible we will expect that the number of units to be rolled out will need to be reduced to around 10 rather than 20.

If your plant did not sign to take part in the roll-out but you are interested in the technology, you will still be promptly informed of the progress, in particular of the results of the technical review.

Once (and if) the roll-out plan is started, MLA will provide progress updates. In particular MLA will announce in advance to the whole industry when the future Open day is to be held once the roll-out is completed. This will indicate that the technology has finally entered the commercialisation phase.

I hope this letter answers most of your questions about Bladestop™. However, please feel free to contact me or Kristina Garlinge (kgarlinge@mla.com.au, ph. 02 9463 9249) if you have any further questions.

Best regards



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